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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,165	09/19/2003	Timothy J. Bomya	5701.00297	7103
26659	7590	08/24/2005	EXAMINER	
RAGGIO & DINNIN, P.C. 2701 CAMBRIDGE COURT, STE. 410 AUBURN HILLS, MI 48326			WHITTINGTON, KENNETH	
			ART UNIT	PAPER NUMBER
			2862	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,165

Applicant(s)

BOMYA, TIMOTHY J.

Examiner

Kenneth J. Whittington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 14-16, 20 and 30 is/are rejected.
- 7) ☒ Claim(s) 11, 13, 17-19, 21-29 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


Bot Ledynh
Primary Examiner

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

The Amendment filed July 5, 2005 has been entered and considered.

Double Patenting

6 The nonstatutory double patenting rejection is based on a
judicially created doctrine grounded in public policy (a policy
reflected in the statute) so as to prevent the unjustified or
improper timewise extension of the "right to exclude" granted by
a patent and to prevent possible harassment by multiple
assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010
12 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed.
Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA
1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and,
In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

18 A timely filed terminal disclaimer in compliance with 37
CFR 1.321(c) may be used to overcome an actual or provisional
rejection based on a nonstatutory double patenting ground
provided the conflicting application or patent is shown to be
commonly owned with this application. See 37 CFR 1.130(b).

24 Effective January 1, 1994, a registered attorney or agent
of record may sign a terminal disclaimer. A terminal disclaimer
signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5, 20 and 28 are rejected under the judicially
created doctrine of obviousness-type double patenting as being
unpatentable over claims 1-19 of U.S. Patent No. 5,587,048.

Although the conflicting claims are not identical, they are not
patentably distinct from each other because the subject matter
30 recited in claims 1-5 and 20 is recited in the claims 1, 3, 10,
17 and 19 of the '048 patent.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3-7, 14, 15 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tyren et al. (US 5,297,439) in view of Wetzel et al. (US 5,428,534). Regarding claim 1, Tyren et al. teaches a magnetic sensor comprising:

a coil associated with a magnetic circuit (See FIG. 4, coil item 8 and circuit running through items 11 and 15),

wherein said at least one coil is adapted to cooperate with a time-varying magnetic flux in said magnetic circuit (See col. 5, lines 6-16) and wherein said time-varying magnetic flux is generated or sensed by said at least one coil and is responsive to a condition of said vehicle body that is sensed by the magnetic sensor (See col. 4, line 61 to col. 5, line 36); and

an electrical circuit operatively coupled to said at least one coil (See FIG. 1, items 3, 6 and 7), wherein said electrical circuit cooperates with the coil so that it exhibits a resonant or near-resonant condition in association with said time-varying magnetic flux for at least one condition of said magnetic circuit (See entire disclosure of Tyren et al., particularly the

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resonant circuit 10 comprising coil 8 and capacitor 9 and see col. 5, line 62 to col. 6, line 2).

However, Tyren et al. does not explicitly teach the deformation sensor incorporated into a vehicle, the magnetic circuit being in the vehicle body. Wetzel et al. teaches a
6 deformation sensor plate incorporated in or directly behind a vehicle body outer skin, particularly a door (See Wetzel et al. col. 2, lines 44-52 and FIG. 1, item 3). It would have been obvious to incorporate the deformation sensor plate as taught by Tyren et al. into the vehicle body outer skin as taught by Wetzel et al. One having ordinary skill in the art would have
12 been motivated to do so in view of the statement in Tyren et al. that the sensor can be applied to various objects for measurement (See Tyren et al. col. 2, lines 48-54), to measure mechanical stress, deformation and other similar magnitudes of an object for measurement (See col. 1, lines 4-6), and the statement in Wetzel et al. that its tripping device uses a known
18 deformation sensor (See Wetzel et al. col. 4, lines 26-30).

Regarding claims 3-5, the combination of Tyren et al. in view of Wetzel et al. teaches monitoring the sensor for nominal or normal condition at the resonant frequency and a defect condition relating to a deformation of the sensor plate (See Tyren et al. col. 4, line 61 to col. 5, line 36).

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Regarding claim 6, the combination of Tyren et al. in view of Wetzel et al. teaches a first electrical circuit comprising

a first coil (See FIG. 4, item 8);

a first capacitor in series with said at least one first coil (See FIG. 4, item 9 and col. 6, lines 10-14); and

6 an oscillator (included in the electrical unit 6 of Tyren et al. FIG. 1) that generates a first signal that is applied to said at least one first coil and a first resonant frequency of said at least one first coil in combination with said at least one first capacitor is at or near a frequency of said first signal for at least one condition of said vehicle body (See
12 Tyren et al. col. 5, line 6 to col. 6, line 2).

Regarding claim 7, the combination of Tyren et al. in view of Wetzel et al. teaches the oscillator comprising a sinusoidal oscillator (See Tyren et al. col. 5, lines 6-12 and col. 5, line 62 to col. 6, line 2).

Regarding claims 14 and 30, the combination of Tyren et al.
18 in view of Wetzel et al. teaches the processor or circuit sensing a signal selected from a voltage across said at least one first coil, a current through said at least one first coil, a voltage across a resistor in series with said at least one first coil, and a voltage across said at least one first capacitor (See Tyren et al. col. 5, lines 41-62).

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Regarding claim 15, the combination of Tyren et al. in view of Wetzel et al. teaches the deformation sensor further comprising a processor, a circuit, or a combination thereof (See Tyren et al. FIG. 1) that determines a measure responsive to or related to an inductance of said at least one first coil (See 6 col., 4, line 61 to col. 5, line 5).

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tyren et al. in view of Wetzel et al. as applied to claims 1 and 6 above, and further in view of Mirdadian et al. (US 3,835,371). Tyren et al. in view of Wetzel 12 et al. teach each and every limitation of claims 1 and 6 as noted above. However, this combination does not teach of alternative waveforms for use in the apparatus. Mirdadian et al. teach it is known to use either square or mono-polar wave oscillator in a LC resonant frequency transmitter (See Mirdadian et al. col. 3, lines 30-40). It would have been obvious to use 18 such waves in the apparatus of Tyren et al. in view of Wetzel et al. because such wave are well known and conventional in art as alternatives to regular analog waves (See Mirdadian et al. col. 3, lines 30-40).

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Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tyren et al. in view of Wetzel et al. as applied to claims 1 and 6 above, and further in view of Withers et al. (US 5,276,398). Tyren et al. in view of Wetzel et al. teach each and every limitation of claims 1 and 6 as noted above. However, this combination does not explicitly teach modifying the capacitance of the coil. It is well known the art to modify the capacitance of a coil as noted by Withers et al. (See Withers et al. col. 1, lines 20-26). One having ordinary skill in the art would have been motivated to do so fine tune the frequency of the coil and avoid unwanted components of a signal (See Withers et al. col. 1, lines 20-26).

Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tyren et al. in view of Wetzel et al. as applied to claims 1 and 6 above, and further in view of Shizuya (US 5,760,577). Tyren et al. in view of Wetzel et al. teach each and every limitation of claims 1 and 6 as discussed above. However, this combination does not explicitly teach incorporating a resistor along with the coil. Shizuya teaches of placing a resistor in series with an LC circuit (See Shizuya FIG. 5, item 26). It would have been obvious to incorporate such a resistor into the circuit taught by Tyren et al. in view

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of Wetzel et al. One having ordinary skill in the art would have been motivated to do so to adjust the voltage level in the resonance circuit (See Shizuya col. 5, lines 58-61).

Claim 16 is rejected under 35 U.S.C. 103(a) as being
6 unpatentable over Tyren et al. in view of Wetzel et al. as applied to claims 1 and 6 above, and further in view of Takahashi (US 5,707,076). Tyren et al. in view of Wetzel et al. teach each and every limitation of claims 1 and 6 as discussed above. However, this combination does not explicitly teach of incorporating a second capacitor to have a pair of capacitors
12 with the coil in series there between. Such an oscillator arrangement is similar to an oscillator well known in the art as a Colpitts oscillator, which is illustrated in Takahashi (See Takahashi FIG. 7). It would have been obvious to incorporate a general Colpitts oscillator design into the combination of Tyren et al. in view of Wetzel et al. such that the coil is in series
18 between two capacitors. One having ordinary skill in the art would have been motivated to do so to tune the frequency of the coil (See Takahashi col. 4, lines 21-34).

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Allowable Subject Matter

Claim 20 would be allowable if a timely filed terminal disclaimer were filed to overcome the double patenting rejection.

6 Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and a timely filed terminal disclaimer were filed to overcome the double patenting rejection.

12 Claims 11, 13, 17-19, 21-29 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Alternatively, claims 21-29 and 31 would be allowable if a terminal disclaimer were filed to overcome the double patenting rejection of claim 20.

18 The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 2 and 20, the prior art (excluding the '048 patent) does not show the magnetic circuit being at least a portion of a vehicle body or frame. Regarding claims 21-29 and 31, based on their dependency, have allowable subject matter for the same reasons.

Regarding claims 11 and 13, the prior art does not show the resistance of the at least one coil being greater than the remainder of circuit elements or resistor.

Regarding claims 17 and 19, the prior art does not show or fairly suggest first and second electrical circuits electrically
6 isolated from one another and magnetically couple to one another. Regarding claim 18, based on its dependency to claim 17, has allowable subject matter for the same reason.

Response to Arguments

Applicant's arguments filed July 5, 2005 have been fully
12 considered and they are persuasive in part, particularly in the combination of Tyren et al. in view of Wetzel et al. wherein this combination teaches of "attaching the magneto-elastic element (11) of Tyren et al. to the outer skin of the vehicle of Wetzel et al." (See Amendment page 14, center paragraph). It is noted that this combination does not teach the magnetic circuit
18 traveling through the vehicle body or frame.

Claim 20, reciting that the magnetic circuit comprises "at least a portion of a vehicle body or frame" thus overcomes the teachings of the prior art and accordingly, the prior art rejections are withdrawn.

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Claim 1, however, simply requires a magnetic circuit of a vehicle body. The recited features do not require the magnetic circuit to comprise or travel through any part or portion of the vehicle body or frame. Thus, attaching a magneto-elastic element to the outer skin for the magnetic circuit would read on
6 such recited features. Accordingly the rejection of claim 1 stands.

Regarding claims 14 and 30, Applicant has asserted that because Tyren et al. radiates a signal and that it does not provide any of the measures enumerated in the claims. However, the voltage and/or current through the coil affect the frequency
12 of the sensor assembly. Based on the frequency of such measurements, the circuit determines whether an abnormal condition is occurring. Thus, the electrical circuit of Tyren et al. is "adapted for sensing" one of the outlined measures.

Regarding claims 8 and 9, Applicant has asserted that Mirdadian et al. teaches the square/monopolar waveform is for
18 control of the waveform, not to be used as an output signal. However, as explicitly recited in Mirdadian et al., the oscillator supplies square wave pulses to the inputs of the transmitter which provides the output to the coils (See FIG. 2, items 11, 31 and coils 11a and 11b and col. 5, line 64 to col.

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6, line 13). Accordingly, Tyren et al. does teach the features of claims 8 and 9.

Regarding claim 10, Applicant has asserted that Withers et al. is silent to the filtering of a harmonic component in the signal. However, as is well known in the art, harmonic components of signals are part of the group of unwanted signal components. Furthermore, as taught by Withers et al. in the cited portion, altering the capacitance of the coil will remove any unwanted signal components. Accordingly, Withers et al. teaches the features of claim 10.

Regarding claim 16, Applicant asserts that Takahashi does not teach the features of the claim and refers to various portions of the specification drawings for illustration. However, Takahashi does teach the recited features as outlined in the rejection above. Furthermore, while the claims are read in light of the specification, limitations in the specification, i.e., the particular circuitry shown and described in the specification and drawings, will not be read into the claims unless positively recited therein.

Conclusion

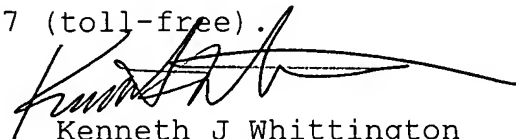
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth

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J. Whittington whose telephone number is (571) 272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kenneth J Whittington
Examiner
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kjw